

[LETTERS]

PRAISE TO ENGINEERS CANADA

As one who started with the original Dominion Council of Professional Engineers in 1963, which was soon to become the Canadian Council of Professional Engineers, I was just delighted with your article about Engineers Canada in the November/December 2011 issue of *Engineering Dimensions* (p. 26).

With other responsibilities, my particular attention was directed to the initiation and formation of what is now the Canadian Engineering Accreditation Board (CEAB). I was most fortunate in having the close co-operation of J. Ormonde Harold, P.Eng., then registrar of APEO, which preceded PEO.

As you pointed out in your article, the CEAB contributes to easy mobility of Canadian engineers across Canada and, in addition, through international agreements, allows well qualified engineers from abroad to enter the Canadian labour force and contribute to the development of Canadian industry and services.

With 240,000 engineers in Canada, Engineers Canada serves a most useful purpose.
G.J. McGee, P.Eng., Ottawa, ON



FOR ELECTRONIC RECEIPTS

I'd like to respond to comments printed in the September/October 2011 issue of *Engineering Dimensions*, specifically, the letter written by Robert (Bob) W. Hurter, P.Eng., entitled "Not so environmentally friendly?" (p. 57).

As a professional engineer who's been in the environmental field for over 20 years, I always find it amusing how people attempt to make an argument against the environmental friendliness of something by focusing on one or two points, while leaving out critical components that, if included, would negate their argument.

For example, Mr. Hurter argues that paper comes from a renewable resource—trees and non-wood fibres (which is true) and highlights that computers are made from plastics and non-renewables (also true). What he leaves out is interesting. Specifically, his letter forgets to mention, for example, that one needs a printer to print on paper. Printers are also made of plastics and non-renewable materials, as are often the inks that are used.

Typically, people already have computers, so making a life-cycle assessment argument assuming that people who receive paper receipts do not have a computer, while those who receive electronic receipts are going to have to purchase a computer, is false and misleading.

In addition, the way in which these materials are managed from cradle to grave has a huge impact on the life-cycle assessment. There's a significant difference between paper that comes from ecologically managed forests and is processed in a more responsible manner (without bleach, in Canada, etc.) versus paper coming from a clear-cut forest

that is, for example, shipped to China, processed into pulp and sent back to Canada...whether the paper is recycled or land-filled is another question. And, there's also a significant difference between computers and printers (and ink cartridges) that are improperly disposed of versus those that are properly recycled.

These are only a few examples to illustrate the point that these topics are not simple and that people have to be careful when making arguments for or against a particular path without considering a much broader assessment.

As for the statement on peer-reviewed studies, I agree with Mr. Hurter—I haven't seen one either, but let's take the counter-argument for fun and compare the power and resources needed to cut down the trees, transport them, process them into pulp, transport to the manufacturer to turn into paper, which is then packaged, transported again to the distribution centre, then to the PEO offices, where it's used by a printer and put into an envelope with a stamp (oh, forgot those last two) and transported again via the post to my house versus the small amount of energy required to send and receive thousands of electronic receipts (hopefully not printed on the other side).

So, I'll pick electronic receipts and agree with PEO that they're more environmentally friendly, unless, of course, Mr. Hurter can produce the facts to back up his claim.
Mike Gerbis, P.Eng., Ottawa, ON

[LETTERS]

LOSING TRUST

I strongly object to paragraph (7) of the proposed wording for the Ontario regulations amendment on the use of the professional engineer's seal: "Holders of a licence or limited licence shall return their seals within 30 days of resigning or accepting reduced fee membership." While I believe the regulation is generally necessary and positive, the inclusion of reduced fee members in the clause is inappropriate.

The root cause of my objection is the implication that professional engineers who are in a circumstance of reduced fee membership (due to retirement, medical leave, pursuing advanced degrees, etc.) cannot be trusted to hold on to their seals and not use them contrary to the act and regulations. As a member who has been on reduced fee membership,

I find the suggestion that I cannot be trusted with my seal to be incredibly insulting and unbecoming of a professional association.

A central notion in self-regulated professions is the idea that professionals can be trusted by the general public to act in an ethical manner. PEO's licensing practice reflects this general principle and it rightfully emphasizes the point that it is an engineer's obligation to act ethically to protect the public and to earn and maintain the public's trust in the fulfillment of his or her work. The seal is a pledge by the professional engineer to his or her client that work has been completed according to appropriate ethical standards, in addition to the more obvious quality standards.

Yet, by contrast, paragraph (7) inexplicably suggests the current fee status of a professional engineer changes the degree to which he or she can be trusted. The unwritten statement is: If we do not administratively require retired members, members pursuing doctoral degrees and members on medical leave to return their seals, they will misuse them to the detriment of the public. The implied message to the public is that professional engineers can only be trusted as far as the administrative process that constrains them. This is likely to erode—not increase—public confidence in the professional engineer as someone worthy of trust.

On a more personal note, my grandfather was a professional engineer and retired member of PEO.

I have fond memories of him showing me his engineering seal and being proud of him that he was a part of something bigger than himself. Were it not for these early experiences, I might not have become a professional engineer myself. Prior to this proposed amendment, the only time a current member was ever required to surrender his or her seal was as punishment for professional sanction. Surrendering one's seal was a shameful act that indicated wrongdoing and the admonition of the profession. It saddens me greatly that it has been proposed that all retiring members should now be treated in that same way.

It is my hope that once this revised practice standard is implemented and ratified, that members will return to being the caretakers of this historical trademark. I urge other members to support me and let the committee know of their concerns.

Mekki Robert MacAulay Abdelwahab, P.Eng., Ottawa, ON



WHAT IS ENGINEERING?

I get the impression that engineers know what engineering is; they just can't put it into words. The article by Pauls and Paciorek ("Understanding the practice of professional engineering," *Engineering Dimensions*, November/December 2011, p. 21) defines the practice of professional engineering (PPE) recursively: "the application of mathematics, natural and applied science, as well as specialized engineering knowledge." With respect, this definition is not very helpful. Some of the best engineers I know can solve a problem with their experience and never use a mathematical formula or science. They use their "engineering knowledge," but what is that? The accumulated lessons of all our mistakes might be a reasonable answer. PEO's webpage says "PEO has no jurisdiction over the practice of natural science" although that's what engineers, by definition, use. Hmmm.

Why not define PPE directly and exhaustively rather than indirectly and vaguely? For example, PPE constitutes:

1. design, analysis, evaluation, construction and demolition of publicly used infrastructure, bridges, buildings, roads, sewers, foundations, lighting, etc.;
 2. software, communication networks, power generation and distribution systems and electronic hardware, the failure of which may create a threat to public safety;
 3. design and production of organisms and molecules that may create a threat to public safety;
 4. design, analysis, evaluation and manufacture of vehicles for public transportation;
- and so on.

These are examples only, intended to demonstrate a regulatory approach. Whether natural scientists, geneticists and other professions are actually engineers might be based on whether the failure of their work will put the public at risk and whether they already have their own self-governance. I'm sure geneticists use mathematics and natural science. Whether they are engineers should be a practical decision based on many other considerations.

Martin Shaw, P.Eng., Coldwater, ON



OSPE'S ROLE

I refer to the President's Message in your November/December 2011 issue ("PEO/OSPE relations—We have reached an impasse," p. 3). President Adams appears to have forgotten that the Association of Professional Engineers of Ontario (known as PEO) was, and is, legislated to protect the public as a regulatory body. The politicians realized this when "our provincial government of the day" made it desirable to separate the advocacy and regulatory functions.

PEO, as the regulatory body, is mandated to protect the public and, hence, controls the use of the word "engineer" and, in some cases, "engineering" by virtue of which it requires annual fees from those properly qualified to use those titles.

It would appear that approximately five-sixths of PEO's virtually captive membership, who have not joined OSPE, pay this annual tax to use the title and legally practise and are not interested in any other engineering organizations set up for their benefit as engineers. This compares with the number of registered engineers across Canada who voluntarily participate in learned engineering societies, approximately one-sixth of those registered.

Over many years, a large number of engineers in Ontario have fought PEO's all-encompassing and expensive attitude towards its role, and PEO's recognition of OSPE appeared to have set the correct leadership role to the other provincial registration bodies.

Most of these provincial bodies have a much smaller membership and, consequently, cannot build up such large reserves from their member fees. This latest presidential missive appears to want to maintain the "fat cat" PEO whilst maintaining high fees, to the detriment of those engineers not wanting it to be more than a regulatory body.

My answer to the five questions posed by President Adams, despite their having been "budgeted for," is a resounding YES.

I applaud OSPE's zeal to take over all the activities at PEO, other than the regulation of the profession. PEO could then become what it should and is legislated to be: a regulatory body.
Peter R. Hart, P.Eng., Toronto, ON

EFFICIENT TRANSPORT

One of the first things I do when I receive my copy of *Engineering Dimensions* is read the Letters section. The readers' comments and opinions are very informative. However, I feel I must comment on M. Carl Kaufman's letter in the November/December 2011 issue ("Is bigger better?" p. 81).

I am not a railroad engineer, nor have I ever worked for a railway (note in Canada they are usually "railways" and not "railroads") but I have been a lifelong railway enthusiast and student of their history, engineering and operating practices. I have close to 400 railway-oriented books in my library and over 1000 periodicals on file pertaining to railways, so I figure I can respond to his letter with some authority—although I am not replying as a professional railway employee or spokesperson.

Everyone in society wants their goods and services delivered as economically, safely and environmentally soundly as possible. Trains do this! However, one of the largest cost factors in railways today is labour. Most trains today operate with a two-person crew: an engineer who runs the train and a conductor who handles all the paperwork involved. The conductor is the boss.

If a train consists of 150 cars, only two people are required. If three 50-car trains were run instead, six people would be required. The number of locomotives in the train does not matter—only the lead unit is staffed. Multiple unit (MU) cables connect the lead unit to the following units. A locomotive mid-train or at the rear is radio-controlled from the lead locomotive.

One of the biggest problems railways have today is capacity, and one of the biggest problem areas contributing to capacity limitations is the number of trains the railway can handle in a day. Shortening the trains, but increasing their number, would have a deleterious effect upon their capacity. Increasing capacity by adding extra tracks, signals, etc. is very expensive and in some cases meets strong public resistance.

When you see a train today, you are seeing the most efficient, safest and environmentally-friendly form of transportation. That is why you see so many containers on trains instead of trucks.

Did you know that one gallon of diesel fuel will haul one ton of cargo 200 miles? Try that in a truck!

Clayton M. Morgan, P.Eng., Bowmanville, ON



[LETTERS]

THOUGHTS ON ACCESSIBILITY

The November/December 2011 *Engineering Dimensions* rightly notes that there are compliance deadlines and expectations under the *Accessibility for Ontarians with Disabilities Act* (AODA) ("Regulator moving toward accessibility compliance," p. 13). In my opinion, compliance should be the least of anyone's motivation to implement accessibility. While the AODA codifies or will codify many specifics of assuring access, all Ontarians with disabilities are already entitled to equal access under the Human Rights Code. AODA compliance deadlines are intended to balance residual service life of existing plans with the needs and rights of people with disabilities for equal access. It is unintended and indeed unethical to justify the creation of new barriers in works of engineering or of services being created pending the compliance dates in the future. Accessibility is part of our ethical obligation as engineers to ensure that our work does not harm people. Access barriers are harmful in physical, socio-economic and psychological/emotional ways, and to many people. Everyone is or will be directly or indirectly affected by disability.

Accessibility is not just about end users of engineered equipment or environments. As PEO operations recognize, there are PEO members like me who have disabilities and are entitled to access. However, the National Educational Association of Disabled Students (NEADS) found that people with disabilities are vastly under-represented in the science, technology, engineering and mathematics (STEM) fields. PEO should be as concerned about this as it is about under-representation of women in engineering. Accessibility is clearly a critical step to redressing this under-representation, but more ambitious initiatives also warrant consideration.

Kathryn Woodcock, PhD, CCPE, P.Eng., Toronto, ON

CORRECTION

In the January/February 2012 issue, page 28, under the list of members of the first APEO council, Galt is reported to be "now Guelph." In fact, Galt became part of Cambridge in 1973.



PEO VS. HUBBERT

I have read, and re-read, the very long report in the November/December 2011 *Gazette*, on the decisions and reasons therefore, in the case against J.D. Hubbert, P.Eng., with the final decision being to dismiss all eight allegations against Hubbert.

It was also decided that Mr. Hubbert would not get any reimbursement to reduce his high legal costs.

There seemed to be much legal wrangling about getting PEO to disclose complete details of a previous case (referred to as "the Lim matter") involving another engineer in an earlier prosecution relating basically to the same complaint. (It seems that this case was also dismissed.) More legal wrangling occurred about the status of expert witnesses.

I cannot help but wonder exactly what PEO expected to accomplish by re-hearing this complaint, very similar to the Lim matter, but against another professional engineer, when it seems the facts were basically the same. Was it to find a scapegoat? I am very concerned about the eight allegations, which presumably were based on facts found by a preliminary staff investigation for this case. Who drew them up and decided to proceed is also of interest (e.g. Who was the "crown attorney"?). The "evidence" at the hearing, presented to support these allegations, surely did not warrant the proceedings in the first place.

I found and read the Lim case on the web, and found it ended up with discussions about "unwarranted proceedings," as did the Hubbert case.

The introduction in the Lim case listed the parties and their legal counsel, while in this case most of these facts were not shown, except near the end of the case write-up. Surely the introduction should also list the names of the Discipline Committee. I think all write-ups should use the same format.

In summary, I am at a loss to know why PEO went ahead with this costly hearing, especially since the previous Lim case also ended with no outcome of guilt, and also since the City of Oakville building department did not have a complaint. But I am pleased that this hearing was published on the request of Mr. Hubbert.

William A. Este, P.Eng., Garson, ON

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